



Design and function

Hydraulic units of 800 and 801 series are high-pressure sources of pressure energy. Their design is identical but they differ in operation; the 800 series units are operated by foot lever, the 801 series units by hand lever.

Hydraulic foot or hand operated unit HA 800, or 801 consists of a two-stage piston pump, reservoir and foot or hand operated lever. The reservoir is fitted with a filling plug with aerating valve and an oil level gauge. The reservoir, lever fork and a flange of pump case are made of stainless steel, case of the pump is made of high-strength light alloy. Duralumin parts are eloxal coated, carbon steel parts are zinc coated. In pump case there are suction and delivery valves, 1st stage unloading valve, pressure relief valve and a mechanically operated discharge valve.

In addition, in types HA 800-1 and HA 801-1 units, the inlet fitting „T“ is connected with the reservoir over a check valve.

HA 800-2 and HA 801-2 units are delivered with mounted hand operated four-way three-position directional control valve and that is why they are not equipped with a discharge valve. Units of 800 and 801 series serve as portable, lightweight sources of hydraulic pressure energy for driving various hydraulic tools, rescue tools or various hoisting devices. HA 800-0 and 801-0 types drive tools that contain a single-acting hydraulic cylinder (cutting and compressing devices, pressing heads etc.) Types HA 800-1 and HA 801 -1 work with tools having double-acting hydraulic cylinder (rescue shears, spreaders etc.)

Function of the unit is as follows: when the lever is moving upwards, fluid from the reservoir is sucked into cylinders of the first and second stages through suction valves 3 and 4. When the lever is forced down, fluid from both cylinders is delivered through delivery valves 5 and 6 to the outlet port P. As soon as the 1st stage relief pressure is reached, spool of the unloading valve 7 shifts and connects the 1st stage discharge with the reservoir. Now only the 2nd stage piston supplies fluid to the outlet port. Adjustable pressure relief valve 8 limits the maximum outlet pressure. Mechanically operated discharge valve 9 when reset, connects the unit outlet with the reservoir.

Use

Use as a light source of high-pressure energy for various assembly and press tools, for rescue tools as well as for various lifting and handling equipment.

Technical data

First stage

displacement	25,4.10 ⁻⁶ m ³
maximum pressure	5 MPa
force on lever	max 400 N

Second stage

displacement	1,8.10 ⁻⁶ m ³
maximum pressure (relief valve setting)	85 MPa
force on lever	max 500 N

Reservoir volume

total	1,75.10 ⁻³ m ³
charge recommended	1,3.10 ⁻³ m ³

Mass

HA 800-0, HA 800-1	8,7 kg
HA 800-2	10,1 kg
HA 801-0, HA 801-1	7,4 kg
HA 801-2	8,8 kg

Installation

The unit is connected with hydraulic circuits by means of hoses or pipes. After disconnecting the unit, the fittings must always be immediately plugged with protecting caps. The foot operated unit HA 800 has its own frame and does not have to be specially fixed before use. However, before being used, the hand operated unit HA 801 should be fixed to a suitable base or a machine frame by means of holes and bolts.

Operating conditions

Temperature:	- working fluid	-20°C up to + 60°C
	- ambient	-20°C up to + 60°C
Fluid	- hydraulic mineral oils viscosity classes ISO VG 32, 46, 68:	
	- HM, ISO-L-HM (specifikace ISO 6743), HLP to DIN 51524-2	
	- HV, ISO-L-HV (specifikace ISO 6743), HVLP to DIN 51524-3	
Viscosity	- recommended range	(20 to 70).10 ⁻⁶ m ² s ⁻¹
	- maximum range	(7 to 400).10 ⁻⁶ m ² s ⁻¹
Class of fluid purity according to ISO 4406:1999		16/13/10

The unit is usually operated in horizontal position. Permissible inclination of the unit in transversal direction is ±45°; in longitudinal direction with hydraulic pump body upwards, the inclination may be by max.10°; with hydraulic pump body downwards, arbitrary. The unit is filled with recommended fluid in vertical position after unscrewing the plug in the rear cover. The right quantity of fluid in the tank is read from the oil gauge in the rear cover; the fluid level should reach min. to the gauge line. After the first connecting the unit to the hydraulic circuit with long hoses and in more frequent exchanges of the tools (cylinders), it is necessary to monitor the quantity of fluid in the reservoir

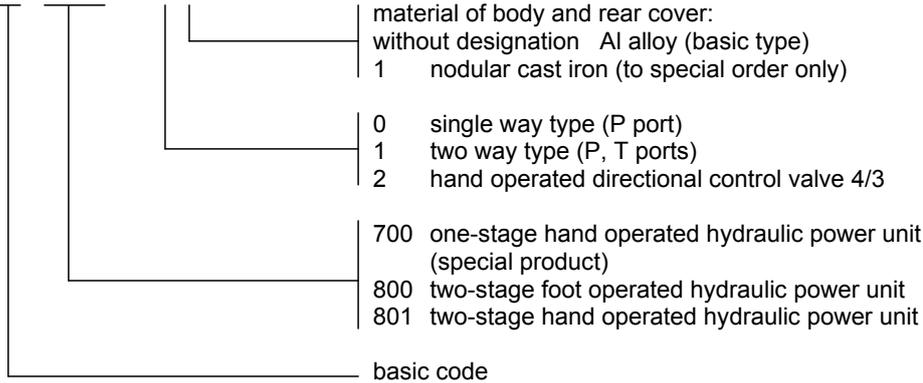
Hydraulic Power Units of HA800 and HA801 Series

and replenish the fluid in time. Exchanging the fluid in the reservoir depends on operating intensity, the minimum interval is once in three years. It is recommended to use fresh fluid and fill it into the reservoir through the filter with filtration rating 10 µm. The units do not require special maintenance during operation, only from time to time, it is necessary to grease the pins of the lever fork.

Delivery conditions

Each product is delivered with Certificate of quality and completeness, and if required, also with Statement of conformity. Spare parts are not delivered with the product. Service and repairs are carried out by the manufacturer or an authorised organization.

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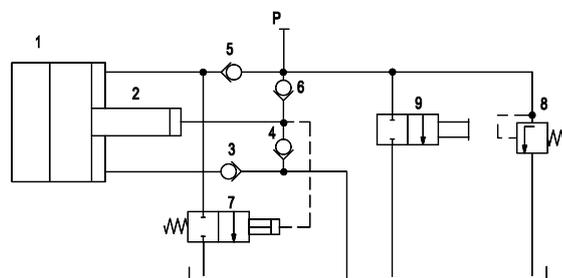


Ordering example: Hand operated two stage hydraulic power unit (basic type) with directional control valve of **HA 801-2** type.

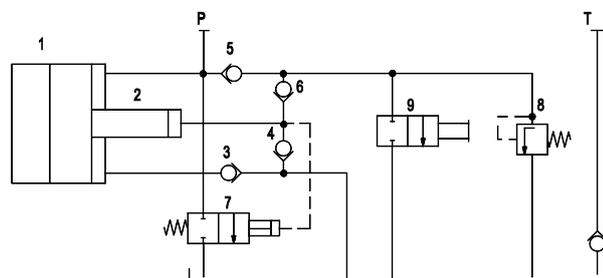
Hydraulic diagram

Legend:

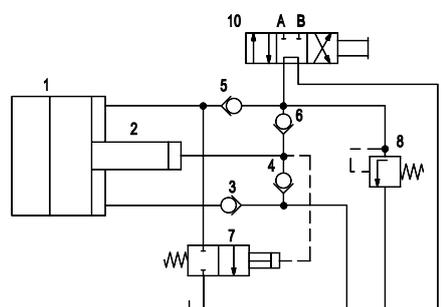
- 1 - 1 st stage piston
- 2 - 2nd stage piston
- 3 - 1 st stage suction valve
- 4 - 2nd stage suction valve
- 5 - 1st stage delivery valve
- 6 - 2nd stage delivery valve
- 7 - 1 st stage unloading valve
- 8 - pressure relief valve
- 9 - discharge valve
- 10 - directional control valve 4/3
- P - outlet port
- T - inlet port (reservoir)



HA 800 - 0, 801 - 0

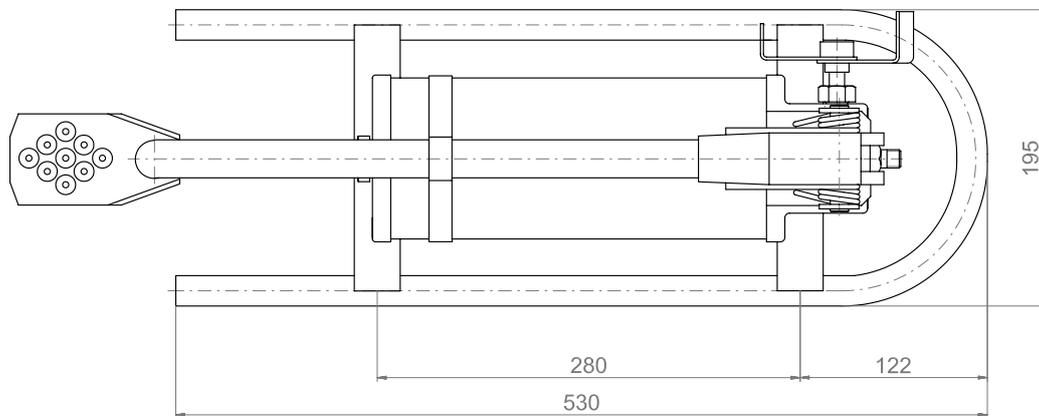
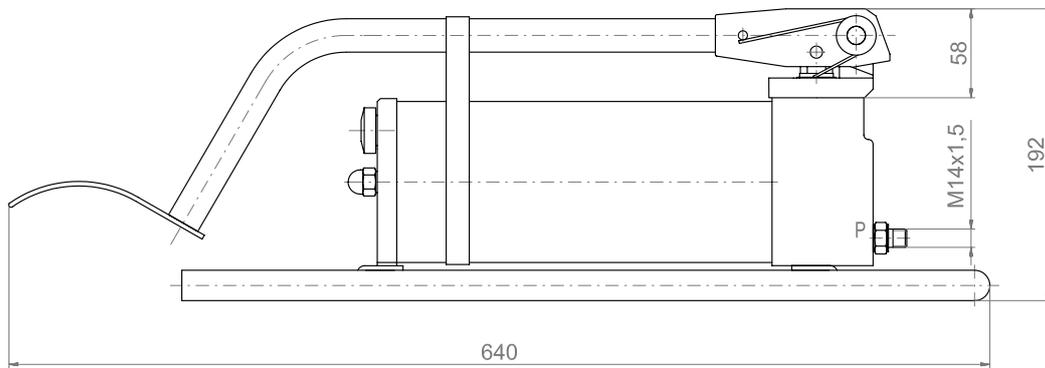


HA 800 -1, 801 -1

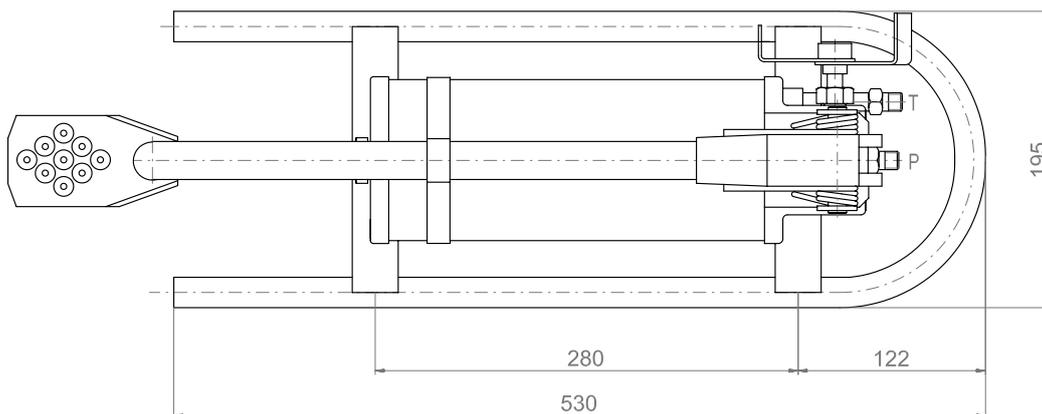
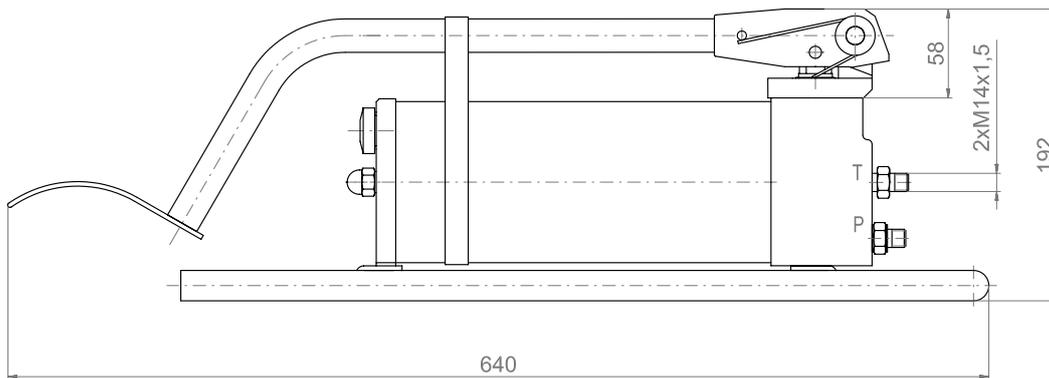


HA 800 - 2, 801 - 2

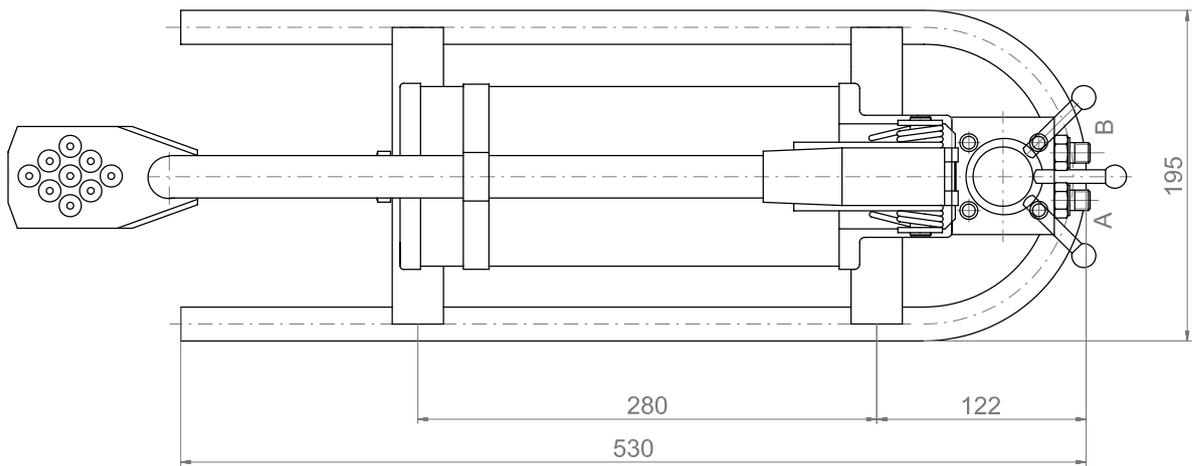
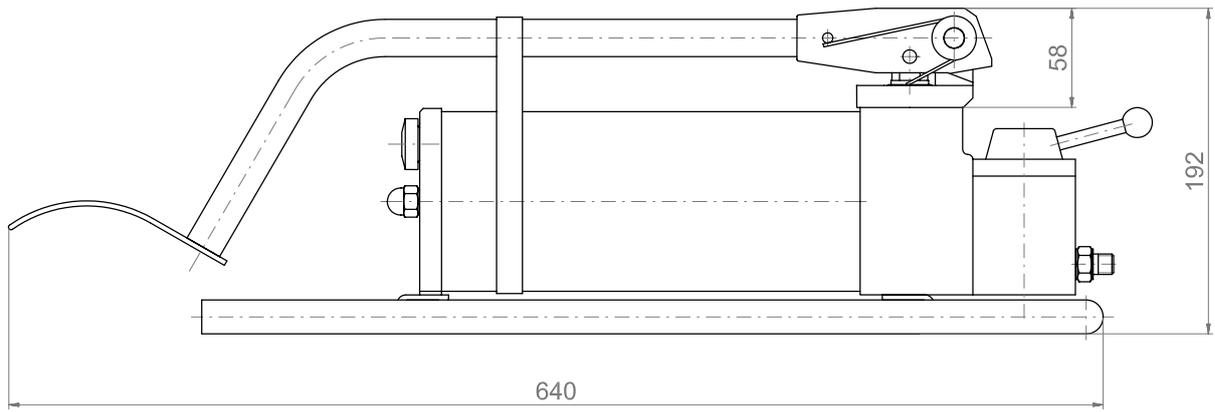
Dimensions



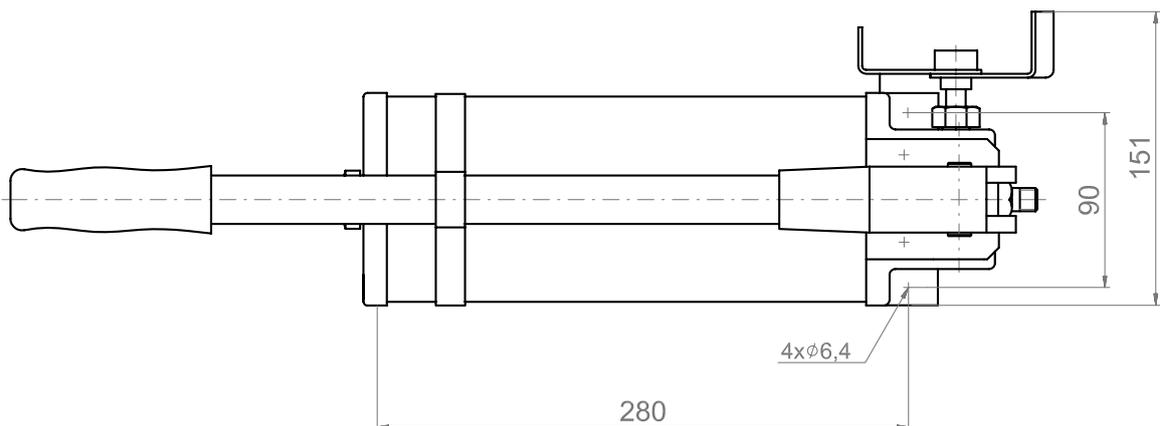
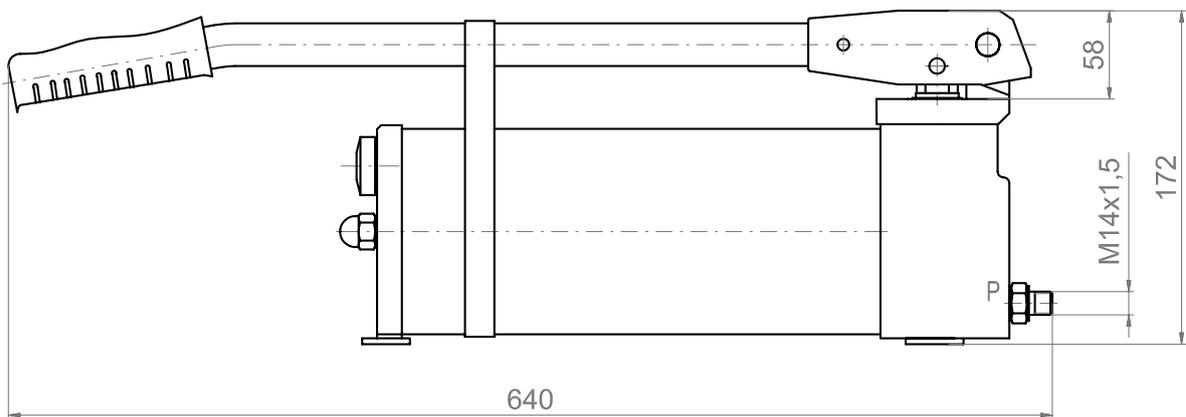
HA 800-0



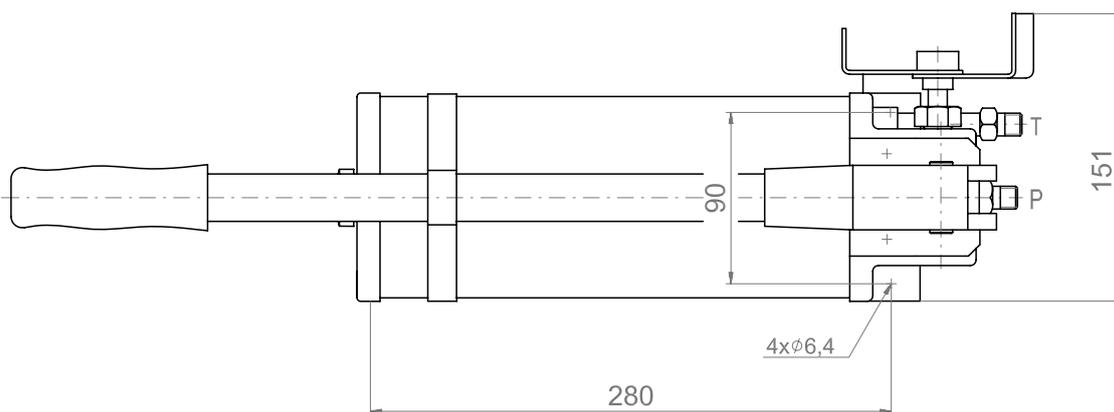
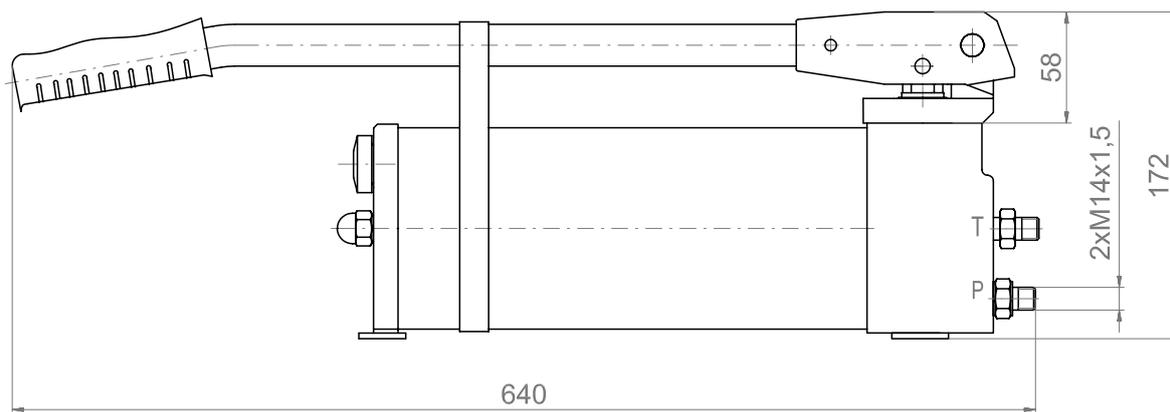
HA 800-1



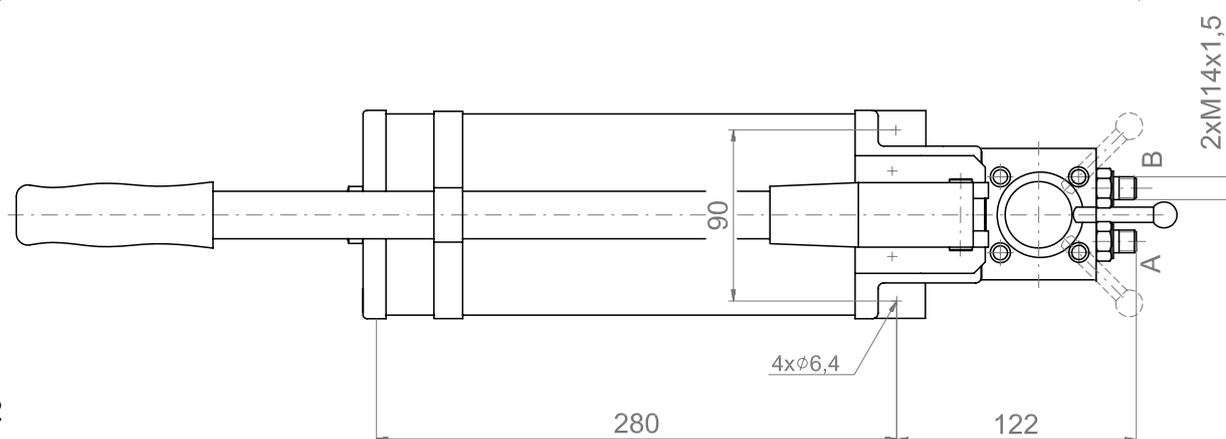
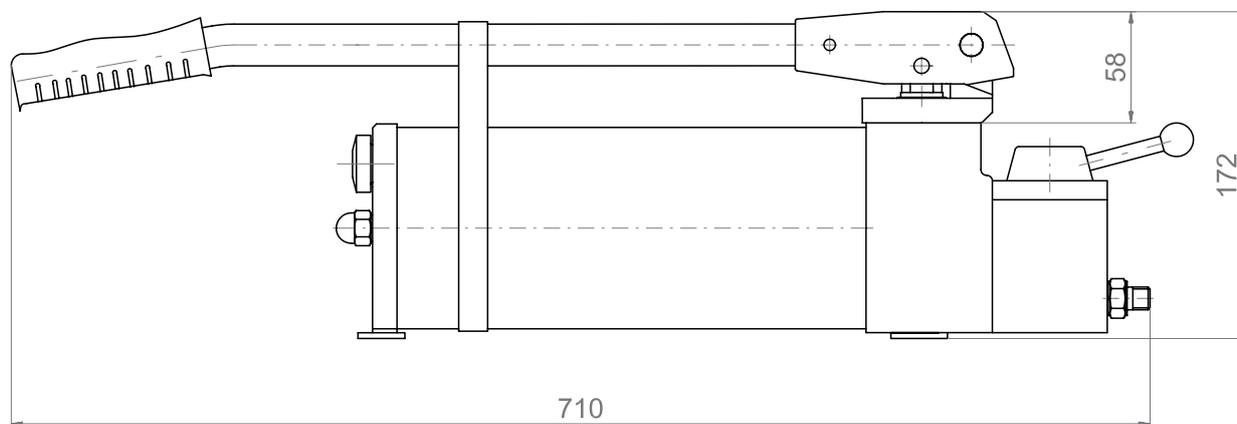
HA 800-2



HA 801-0



HA 801-1



HA 801-2